

**INTERIM REPORT
ON QUESTIONS RELATING TO RETAIL GASOLINE PRICES
IN THE CITY OF WINNIPEG**

**Submitted to
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Province of Manitoba,
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PRELIMINARY DRAFT: FOR DISCUSSION ONLY

EXECUTIVE SUMMARY

1. PART I

1.1 Introduction: report objectives

This is a preliminary interim report covering only one of the five terms of reference set out in the Order in Council for this commission; the report deals only with crude oil prices and retail gasoline prices in Winnipeg in recent months.

The conclusions of this report are preliminary and need more study in order to be finalized; the calculations relating to the specific question, however, are close to the absolute minimum changes that may be expected in gasoline prices from the recent developments in crude oil markets and, as such, they are not expected to be reduced in the final version of this report.

2. PART II

2.1 Introduction

The main question dealt with herein has three basic components; (a) whether retail gasoline prices should fall irrespective of the temporary or permanent nature of the fall in oil prices and, if so, (b) how soon and (c) by how much.

To answer all parts of this question one needs to study: the possible nature of the fall in oil prices and its importance for sound consumer decisions and the viability of the oil industry in Canada; matters relating to inventory size, valuation, and financing in the oil industry; and matters relating to product pricing and cost-price relationships in that industry.

2.2 Recent market developments

Oil prices have fallen and fluctuated in recent months (see Figure 1: all figures are at the end of this report), and their future course is uncertain. These developments have reportedly caused difficulties in the Canadian oil industry, and some argue that prices have fallen below the viability threshold for oil exploration, development and production in Canada.

While gasoline prices in the United States have responded promptly and fully to recent falls in oil prices (Figure 2) retail gasoline prices in Winnipeg have not only lagged but also they have not fallen to the same extent (Figure 3). Since the tax structure has not changed substantially recently, it cannot be blamed; oil companies explain the difference by pointing to high-priced inventories which have to be cleared before prices fall at retail. There are doubts about both the logic of this explanation and the size of inventories in place.

2.3 Public perceptions

Gasoline is not only a price-visible commodity but also an important one in consumer budgets; moreover, it has a history of relatively high inflation in the last decade (Figure 4). The public, therefore, is not only aware of geographical price differences (Figure 5) but also feels that prices should fall with the same promptness and degree of response that they were perceived to rise in the past. Recent export activities of oil companies at prices lower than Canadian wholesale have compounded the problem. Few oil companies have sought to explain their position to the public in a systematic manner.

2.4 The industry

The general structure of the industry appears as oligopolistic (the four largest firms control about 68% of gasoline sales) with perhaps competitive fringes (Figures 6A, 6B); detailed analysis is needed before conclusions may be drawn on conduct and performance in the industry.

When oil prices were rising in the seventies the industry asked for immediate and full increases at retail to reflect higher costs, but the Federal government regulated both the timing and the extent of retail price increases.

The industry also argues that (a) consumers value gasoline highly, therefore its current price is proper, and (b) cost and price are not directly related, since price is market-driven.

3. CONCLUSIONS

3.1 On matters relating to the nature of the oil price fall

It is difficult to draw conclusions on either the permanence of the price fall or the associated price instability. It is essential to determine the 'normal' long-term price for the industry in Canada, since maintenance of this price is important not only for the industry's continued existence and growth but also for correct consumer decisions regarding energy use.

3.2 On matters relating to inventories

The industry's position on financing of increases in inventory investment implies that consumers should provide the extra capital, through higher retail prices and a temporarily higher rate of return. The argument is difficult to accept since it seems equivalent to a corporation increasing its prices temporarily in order to build another plant. In any event, if higher inventory values are to be financed by higher prices, the same logic suggests that when prices fall the retail price of the produced goods should follow suit immediately, thus returning the capital back to consumers.

The historical reality, however, is that Canadian oil prices have made a full circle from low to high levels and back; the regulations imposed on the industry when prices were on the rise expose the fact that tables have turned and arguments are now reversed. Serious questions of fairness arise if reverse logic is to be applied for regulations now that prices are falling. This is unfortunately independent

of whether the industry's or the regulators' position in the past was right or wrong.

3.3 On the relationship between cost and price

The industry's argument that market price is driven by competition, and that therefore cost plays little role in its determination, understates the basic relationship between long-term and short-term factors. While it is true that short-term market prices may differ from normal long-term prices, it is also true that short-term market gravitates towards normal price and that, unless changes in competitive conditions occur, changes in normal prices will be passed onto market prices (Figure 8A). Since normal prices do respond to cost changes, the question that must be addressed by any arguments attempting to disengage cost changes from changes in market prices is whether competitive conditions have changed.

It is worth noting that, while the industry accepts the relationship between cost and normal price, and while it passes cost increases onto normal prices immediately, it nevertheless seems to neglect to pass all cost reductions onto that price (Figures 7 and 8).

3.4 On consumer valuation of gasoline

The position of the industry that consumers are 'getting a bargain' at current gasoline prices is overstated, since it ignores at least two factors: first, gasoline consumption involves use of durable equipment, whose existence makes it difficult for consumers to immedi-

ately switch away from gasoline in response to rises in its price, no matter how badly they wish to do so. Second, higher gasoline prices cause inflationary pressures, which in turn increase nominal incomes; with higher incomes, consumers are prepared to pay higher prices, but this should not be interpreted as higher consumer valuation of gasoline.

3.5 On whether retail gasoline prices should be reduced

The main conclusion from the analysis of matters relating to crude oil prices and normal as well as retail gasoline prices in Winnipeg in recent months is that prices at the retail level have not fallen so much as might be expected under quite conservative assumptions (Tables 9 and 10).

More specifically, analysis herein indicates that prices could have fallen from a low of 9.22 c/l to a high of 11.26 c/l, using price averages.¹ The 9 c/l decrease recorded by April 3, 1986, is on the low side.

Moreover, oil prices have fallen further quite substantially since February 14, 1976. On an average price basis the total price fall from the average price between June and December 1985 and March 7, 1986 is \$20.55 and (at .69 c/l and a sixty-day lag) prices of gasoline should be down by another 5 c/l by May 8. Given the relative reluctance displayed by the price-setting mechanisms in the gasoline market, mon-

¹ Reducing the inventory lag from sixty to 55 days brings the expected reduction from 9.22 c/l to 10.65 c/l, and consideration of uneven price falls between diesel and gasoline increases the expected reduction to 11.26 c/l.

itoring is needed to ensure proper price changes.

Finally, two other related points may be raised here:

- a) For every day's or week's delay in reduction of retail gasoline prices, oil companies would be making excess profit equal to the required price fall times the sales of the period. This excess profit may be calculated from data on sales per period, should such delays occur in the future.
- b) The reported resistance of fuel oil/diesel prices raises serious questions of price discrimination against such user groups as farmers and transport firms.

3.6 On further study required

Below is a list of matters yet to be investigated; their order of presentation implies their relative importance.

1. Crude Oil and Gasoline Prices:

- a) We must study the market structure in the production, refining and distribution sectors of the oil industry; how this structure affects conduct and performance in the industry, if at all; and what, if anything, the Province could do to improve competitive conditions where they may not be adequate.

² That is, the crude oil producers, the integrated companies, the refiners, the company dealers, the independent dealers, and perhaps the public.

- b) All interested parties² ought to be invited to submit written briefs³ so that the picture of the industry may become complete.
- c) For a full and less conservative estimate of when retail prices must fall in response to lower crude oil prices, both the size and the composition of current inventories of oil companies in Manitoba⁴ must be further investigated. If inventories are found lower than the conservative number of fifty-five days used in this interim report, or if they are found to have been acquired at prices higher than that assumed herein, the oil industry will be shown to have made above normal profits at the expense of consumers and other users of crude oil by-products.
- d) It is useful to examine if the slow and inadequate response of gasoline prices in Manitoba, compared to prices in other Provinces and the U.S., is due to more factors than simply less competition in this Province compared to the U.S. and to other Provinces.⁵
- e) In order to determine appropriate reductions in prices of crude oil by-products other than gasoline we must examine the question of pricing of joint products (gasoline versus fuel oil, etc) and the associated question of expected rev-

² The substance of which may be generated during informal meetings with them.

⁴ That is, how many days' inventories there are in the Province, and at what prices these inventories were acquired.

⁵ How much difference do taxes make, for example? Are inventories different in the U.S. or in other Provinces?

enue from sales of all by-products obtained from a barrel of crude oil.⁶

f) To ensure viability of oil production in the Province and in Canada the long-term 'normal' price of crude must be determined, and instability in the market must be reduced; also, retail prices must reflect the 'normal' price.⁷

2. Price differentials in Manitoba:

The question of price differentials in various areas of the Province has yet to be examined by this commission; it should perhaps be noted here that the questions raised in (1) above are not unrelated to this matter, since they would help determine 'proper' price levels for Winnipeg; these prices would then form the basis for the determination of 'proper' prices elsewhere in Manitoba, based on justifiable differential costs.

3. Regulatory matters:

Finally, there are the questions of what regulatory powers the Provincial Government has or should have, and whether it should use such powers to regulate retail gasoline prices on an ongoing basis.

⁶ The analysis in this report assumes that the prices of all by-products are reduced at the same rate as gasoline; if this has not happened, gasoline prices must fall further than calculated herein.

⁷ This may be more appropriately studied at the Federal Government level.

4. RECOMMENDATIONS

1. It is recommended that the Government should consider taking action to regulate gasoline prices to a level ranging between 9 c/l and 10.5 c/l lower than they were on February 12, 1986.

It is further recommended that, since the matter of regulatory form has not been studied as yet, the government take a one-time action on the above recommendation, and that further it monitor retail gasoline prices for the expected responses to falls in crude prices beyond February 14, 1986, and the associated falls in retail gasoline prices after April 7, 1986.

2. Finally, it is reported that, as per the appropriate section under 'conclusions' of this interim report, further study is needed into this specific matter, apart from the other matters yet to be reported upon according to the order in council for this investigation.

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PART I

INTRODUCTION: REPORT OBJECTIVES

The oil industry is rather complicated, and in more than one dimension. Multiple products, geographical differences, varying degrees of competition, specific contract arrangements at the wholesale level, and the many stages in the production, refining and marketing processes of crude oil make investigation time-consuming and general statements about the industry rather difficult.

This interim report deals only with the relationship between world crude oil prices and retail gasoline prices in Winnipeg in recent months; it does not attempt to answer the rest of the questions which are included in the Order in Council for this investigation, that is,

1. The relationship between world crude oil prices and retail gasoline prices not only in Winnipeg but also in the rest of the Province of Manitoba, and not only during recent months but also in the more distant past and the immediate future
2. The relationship between world crude oil prices and prices of related products, such as diesel/heating oil,² in Manitoba over time
3. What measures could be taken to ensure that retail gasoline and related product prices in Manitoba adequately reflect world crude oil prices

² And perhaps natural gas, once it has been de-regulated.

4. The investigation of factors affecting retail price differentials between the Winnipeg retail market and other market areas in Manitoba³
5. The associated investigation of what regulatory powers the Province has or should have in relation to gasoline and oil and related products.

The results reported herein are derived from preliminary investigation; more detailed study is needed for a final set of conclusions. However, the results given in this interim report as to the retail price of gasoline in Winnipeg in recent months are minimum changes that should be expected in normal⁴ retail gasoline prices as a consequence of lower world crude oil prices, and as such will most probably not be reduced in the final version of this report.

³ Price differentials exist not only within Manitoba, but also across Provinces.

⁴ The precise definition of this term is given in the section entitled 'analysis', below.

PART II

WORLD CRUDE OIL PRICES AND RETAIL GASOLINE PRICES IN WINNIPEG

5. INTRODUCTION

As indicated in the introduction to Part I of this interim report, the sole question under consideration here is the relationship between world crude oil prices and retail gasoline prices in Winnipeg. This general question may be broken into the following parts:

- a) How permanent can we consider the recent fall in crude oil prices to be? Should retail gasoline prices in Winnipeg reflect it fully or should the degree of permanence of the fall make a difference?
- b) If retail prices should fall, how soon should they fall?
- c) By how much should retail prices fall in response to the fall in crude oil prices?

An answer to (a) above requires consideration of both the possible degree of permanence of the price fall, and of the importance of that permanence for the analysis: if the fall is to be permanent, long-term economic decisions based on lower prices can be made on the basis of such prices and no reversals will be necessary for some time; if the fall is to be only temporary, there is some risk that long-term economic decisions may be taken that will have to be reversed soon after, with unfavourable cost consequences.

An answer to (b) above requires some judgement as to the treatment of inventories of the oil industry at times of changing prices of that inventory; it may also require determination of the time necessary for the existing inventory to 'flow through' the production process.

Finally, an answer to (c) may be obtained by the use of a simple model, which would trace changes in elements of cost (such as the cost of crude, the cost of circulating capital invested in inventory, etc) through to changes in the 'normal' price. Such a partial model would be based on the assumption that the various components of the structure of the industry remain unchanged during the three-month period in question.⁵

This assumption may, prima facie, appear to weaken the results of the analysis, but it is in fact quite legitimate both analytically and practically, given the length of the period under consideration; not much is expected to have changed in the industry in such a short time-span.

⁵ That is, the composition of output, the structure of profitability of the various sections of the industry, the overall rate of return on capital invested in the industry, the technical conditions of production, the structure of contracts at the marketing level, the degree of competition across product lines and geographical areas, etc., will be assumed unchanged.

6. BACKGROUND: RECENT DEVELOPMENTS

6.1 International Oil Markets

Prices of crude oil in international markets have not only fallen substantially, but also fluctuated in the last five months. See Figure 1 and Table 1.

These developments are mainly attributed to Saudi Arabia's attempt to regain at least partial control of the conditions of world oil supply and to indicate to non-OPEC producers (especially Great Britain) that they must follow suit in managing supply or take the consequences of their behaviour in revenue losses.⁶

With the non-OPEC producers not conforming, and in the face of lack of agreement within OPEC as to the specifics of curtailing their own production, total world supply of crude oil has exceeded total demand for some time now, causing prices to plummet. For example, the price of benchmark Texas crude in Chicago fell from \$40.82 CDN per barrel on December 6, 1985 to \$17.92 CDN per barrel on March 7, 1986, a fall of \$22.09 CDN per barrel in three months. The rest of March 1986 has seen the price of crude fall below \$10 U.S. and then rebound a little. See Figure 1.

⁶ Increases in quantities supplied cause a decrease in oil prices by a larger proportion than the supply change, thus resulting in lower total sales receipts, despite the larger quantities sold; this is because the so-called elasticity of world demand for oil is (as estimated by the World Bank) less than .2 in the short-run and another .2 after five years. That is, prices change by proportions five times larger than quantities do, in the short period.

Instability in the international oil market is expected to continue as long as Saudi Arabia and other OPEC producers keep their production at levels above pre-cartel agreements, and as long as non-OPEC producers do not reduce their share of the market. How long this condition is going to last in the international markets is difficult to predict; also difficult to predict is the final range, if any, in which oil prices may eventually settle.

These developments are reported to be causing considerable difficulty to the North American oil producing sector of the industry; Producers in the U.S. are reported to be in serious trouble, given the high cost of oil production in that country. In the home front, the fall and associated instability in oil prices in recent months has reportedly put some Canadian oil producers in difficulty and has brought uncertainty to the viability of exploration projects planned or under way. The industry is reported to claim that at least \$18-20 U.S. per barrel is needed for long-term viability of domestic supply, and efforts are already under way to seek some form of support or protection of the home industry from low and unstable international oil prices. Suggestions range from the imposition of a tariff to the immediate abolition of the Petroleum and Gas Revenue Tax to the establishment of a minimum domestic oil price.

6.2 Gasoline Markets

Gasoline prices in the United States market have followed the downward trend of crude prices rather faithfully, as indicated by Figure 2 and Table 2.

As for gasoline prices in Winnipeg, despite the substantial fall in crude prices, and despite the recent deregulation measures which were supposed to create a market environment so that prices would continue to decline, average retail prices for regular leaded at self-serve outlets rose from 51.4 c/l in June 1985 to 52.5 c/l by November 8, 1985, edged up to 54.4 c/l in the week ending January 3, 1986, and remained there until the week ending February 21, 1986, when they fell by 2 c/l to 52.4 c/l. The next fall was in the week of March 14, 1986, by another 2 c/l to 50.4 c/l, then on March 28, 1986 by 3 c/l to 47.4 c/l, and finally on April 3rd, 1986, by another 2 c/l to 45.4c/l.⁷ See Figure 3 and Table 3.

Thus, while Winnipeg gasoline prices at the pump finally moved in the direction of crude oil prices, they have lagged substantially, and perhaps not fallen to the extent justified by the crude oil price fall.

Moreover, major oil companies in the city have been reported to export gasoline at prices well below those charged to their local dealers, though not in very large quantities in comparison to the size of the market.

The delay in reductions of gasoline prices has occurred not only in Winnipeg but also in other cities across Canada.

Such delay is, according to the oil companies, necessary in order that high-priced inventory be allowed to be sold at prices recovering costs. This process takes at least sixty and sometimes ninety and

⁷ Data from surveys of major oil companies.

even more days, according to industry spokesmen.⁹

This lag, however, is much shorter according to spokesmen for the independents⁹ and some analysts¹⁰ and does not seem to operate in the U.S., as the data in Table 2 and Figure 2 show. Moreover, the existence of such a long lag may have to be explained in the face of a reported 20-day storage capacity of most refineries.¹¹

Since Canadian retail gasoline prices include a certain portion of taxes and royalties imposed in various stages of the production and disposition of the product, it is necessary to also look for any changes that may have taken place in the tax structure in the period under consideration.

While Provincial consumption taxes have remained at 8.9 c/l in this period, Federal consumption taxes did rise from 4.7 c/l in June 1985 to 6.8 c/l in October and 7.1 c/l in January 1986, bringing total consumption taxes from 13.6 c/l in June 1985 to 16 c/l in January 1986. Further, however, the government has also reduced the tax on oil company revenue, and spokesmen for independents are reported to claim that royalty reductions and holidays in B.C., Saskatchewan and Alberta would allow oil prices to fall by \$6-7/bbl without reducing oil

⁹ For example, Mr. Sandy Hunter, of PetroCanada, is reported to claim that it takes 83 days for oil from the ground to the pump. (WPG SUN FEB 19/1986)

¹⁰ James Conrad, Executive Vice-President of the Petroleum Marketers Association of Canada, as quoted in the Globe and Mail, Jan 22/1986.

¹¹ For example, Mart Hommick, oil analyst with Dean Witter Reynolds (Can) inc. of Toronto, thinks it is 30 days

¹¹ the Wpg Free Press, Feb 6, 1986

Company revenues.¹²

7. PUBLIC PERCEPTIONS

This section will be complete when submissions from the general public have been sought and reported; the following is only a brief summary of points raised in recent press reports.

The question of public perception ought to loom large in the priorities of the public relations personnel of the industry. Gasoline purchases form a major component of the typical consumer basket and, as it can be seen from Figure 4 gasoline price changes exceeded changes in the general Consumer Price Index for long periods in the past. Moreover, gasoline is a very price-visible commodity at all times and places; it is also a commodity purchased not for direct satisfaction¹³ but for the indirect provision of a service, and as such it may be purchased by some consumers with a feeling of grudge.

A consequence of the above considerations is that the ill effects of the oil price spiral of the seventies are remembered too vividly and too widely to be ignored. Therefore, now that oil prices are on the decline and that taxes on oil company revenues have been lowered somewhat¹⁴ one would think that it is time to either allow the public to enjoy the benefits of lower gasoline prices or to explain carefully

¹² R. Andrews, Managing Director of Independent Petroleum Association of Canada, the Globe and Mail, Jan. 22, 86.

¹³ Such as, for example, would be the case for clothing, entertainment, etc.

¹⁴ The bill on the reduction and eventual abolition of the Petroleum and Gas Revenue Tax (PGRT) received final approval in January 1986.

and persuasively why lower prices have not been forthcoming with the speed and intensity that price rises were applied, especially when oil companies report profits at quite healthy levels.¹⁵

More specifically,

1. the public fails to see the oil companies' rationale in handling inventory costs asymmetrically; that is, when crude prices were rising in the seventies the oil companies insisted on raising retail gasoline prices promptly, and selling low-cost inventory at high retail prices.¹⁶ However, they now seem to argue that high-cost inventory has to be depleted at high retail prices before the latter fall.
2. The public also have a problem understanding why U.S. prices have responded so promptly and by so much while Canadian prices have not.¹⁷ See Figure 5 and Table 5.
3. Moreover, oil majors were reported to export gasoline to the U.S. at prices equivalent to 45.7 c/l when they were charging local retail dealers 52.8 c/l, a difference of about 7 c/l (tax differentials taken into account in the above). The same situation was reported to occur in diesel oil. Finally, U.S. buyers were reported to come to Canada, load gasoline at low prices,

¹⁵ Imperial Oil reported \$150 million in 1985 (the Globe and Mail, Jan 25, 86)

¹⁶ The Anti-Inflation Board established the 60-day lag between crude and gasoline price changes.

¹⁷ On January 25, 1986, Wpg motorists were paying about 10c/l more than N. Dakota residents (the Wpg Free Press, Jan 25, 86). On March 15, 86, the difference was 19c/l (the Wpg Free Press, March 15). On March 11, prices of gasoline in the States were quoted at 23.3c/l CDN as opposed to 52c/l CDN (the Wpg Free Press, March 11)

cross the border, and re-enter to sell the gasoline to Canadian resellers who could not get the gasoline from the refiners at a similar price. This has been called the Regina loop.¹⁸

One would not expect oil companies to welcome groups such as the Canadian committee for the Reduction of Gas Prices, or commissions of inquiry into pricing and the structure of the market; it is therefore surprising how little effort the industry majors have made to explain the recent developments to the public.¹⁹

8. THE INDUSTRY

8.1 Introduction

This section examines the market structure in the oil industry and its evolution over time, as well as the positions of the various sections of the industry on issues of interest to this investigation. After the first subsection on the industry's structure, the other subsections present the opinions and arguments of the producers, the majors, their dealers, and of the independents.

8.2 The structure of the oil industry

While it would be instructive to examine in detail the market structure in the various stages of production and distribution of the industry, such examination will be left to the final report on the

¹⁸ Oil Buyers' Guide, February 1986

¹⁹ An exception is perhaps Texaco, which has come out with a leaflet explaining the point of view of the industry in the matter. More about this in the section below.

subject. Suffice it to say in this interim report that the oil sector as a whole appears to have a rather high degree of industrial concentration; as the attached pie graphs (Figures 6A and 6B, Table 6) show, the four largest firms (Petro-Canada, Shell, Esso and Texaco, in that order) commanded 64.4% of the total number of retail outlets and 68.7% of the volume sold in 1985.²⁰

8.3 The Crude Oil Producers

Contacts have yet to be made with this group. The plan is to invite written submissions for consideration.

8.4 The Integrated Oil Companies

The position of the integrated majors presented in this report is a summary of material presented in their submissions to governments and commissions, material that they have published for general information purposes and information obtained from informal contacts with some of them, during this investigation.

While every attempt has been made to faithfully represent and explain the point of view expressed in the above sources, this part of the report is, by virtue of time-constraints, neither final nor complete; substantial additions and changes are expected to be made to it once the integrated majors are given the opportunity and the time to react to the presentation which follows.²¹ In fact it is quite possi-

²⁰ Data from Kent Marketing Services Limited.

²¹ This would be part of the next stage in the investigation.

ble that, contrary to the implication of the following remarks, there might not exist a uniform position of the industry on some issues.

8.4.1 The Industry's Arguments when Prices Were on the Rise

Exactly the same questions as are being asked today with respect to gasoline prices were a matter of concern when oil prices were rising in the seventies. The only difference was that the positions were reversed. That is, the oil companies were at pains to point out that retail prices should respond promptly to rises in material (crude oil) costs, and governments and the public thought that price increases should be delayed.

The following points, among others, were raised in a submission of Gulf Oil Canada Ltd to Manitoba Government Officials,²² and in submissions of oil companies to the Isbister Commission and to other governments:²³

1. On the Nature and Size of Inventories

- a) A certain amount of inventories is required for the smooth operation of the Oil business.

All inventories held in the Oil industry in that period were claimed by the companies as necessary.

²² Submission of Gulf Oil Canada Ltd to Manitoba Government Officials, Summer 1975.

²³ As reported in government documents, such as those of the Intergovernmental Task Force on Petroleum Inventories.

- b) Physical inventory size varies with distance from crude oil sources, distance from markets, the number, size location and operating capabilities of refineries, the company's estimate of threats of interruption in supply, and its estimate of likely price changes. For example, when price is expected to rise, inventory may be higher than normal.
- c) It is unlikely that inventory size is uniform across the industry; each company's conditions are different, as far as the above factors are concerned.
- d) The inventories for Gulf oil in the Prairies on June 30th, 1975 were estimated by Gulf to be 42 days' supply.

2. On How soon After the Crude Price Rise Should Gasoline Prices Rise

- a) The industry argued that there was no economic justification for delay in passing the higher crude oil prices to the retail level.

Their main reason was that, since higher crude oil prices necessitated higher investment in inventory, the industry should be allowed to increase retail prices immediately, thus making the above-normal profit that would enable them to finance additional inventory investment. See below.

3. On Inventory Investment Costs and Financing when Prices Rise

- a) The cost of funds invested in inventories is a necessary cost of production. It pays the firm to attempt to minimize such costs, subject to the constraint of avoiding stockouts.

- b) Inventory investment is expected to yield an adequate rate of return, as any other type of investment.
- c) Rising material prices raise the amount of inventory investment (circulating capital for inventories) which must be maintained in the business.²⁴ This means that
 - i) additional funds are needed to invest in inventories.

The position of the industry was that the additional funds necessary to invest in inventories²⁵ should be obtained from additional cash flow, that is, from higher product prices.

These higher product prices should be instituted immediately after the price of crude went up, to help create the additional cash flow that would then finance the higher inventory investment. In any case, not only would profits from this price rise be illusory (since they would be necessary for investment in inventories) but there would be tax on them, too.

In other words, the industry suggested that it should be allowed to make higher than normal profit on the low-priced inventory; it would then simply invest this excess after-tax profit in the additional working capital which became necessary from the higher crude prices.

²⁴ Assuming constant physical inventory size.

²⁵ Due to the higher crude prices.

- ii) The additional funds invested in inventory must bring an adequate rate of return; that is, costs of production (and therefore selling prices) must rise to cover the return on these funds.

The position of Gulf Oil was that, for an increase in the cost of crude of \$1.50/barrel²⁶ the cost increase from the return expected on the additional inventory investment (working capital) would be .22 c/gallon, that is, .048 c/litre.²⁷

4. On The Amount by which Retail Prices have to be Raised

- a) For the purposes of what follows it may be useful to give here the basic measures used and their relations. A barrel is 35 imperial gallons or 42 U.S. gallons, while a gallon is approximately 4.5454 litres. This means that a barrel is approximately 159 litres.
- b) According to Gulf's calculations, a \$1.00 increase in the barrel price²⁸ means a 2.86 c/gallon increase, plus a 5% allowance for refinery fuel losses, i.e., .143 c/gallon, for a total material cost increase of $2.86 + .143 = 3.003$ c/gallon. Added to that is the cost of increase of inventory investment capital of .147 c/gallon, for a total of $3.003 + .147 = 3.15$ c/gallon or .69 cents/litre of product.

²⁶ That is, 4.29 c/gallon, or .9449 c/l.

²⁷ The per \$1.00/barrel increase in crude prices works out, according to the Gulf figures, to an increase of .032 c/litre.

²⁸ The actual calculations in the company's submission are made on the basis of a \$1.50 increase

Because of concern that the residual fuel market might not absorb the full price increase at volumes necessitated by technical considerations²⁸ it was proposed that residual fuel prices be increased by 2.2666 c/gallon or .50 c/litre, and the lighter oils (including gasoline and diesel) be increased by 3.333 c/gallon or .73 c/litre.

5. On the Relationship Between Cost and Market Price

The above proposed increases would be posted, according to the Company, but not necessarily realized, since market prices might not rise accordingly.

The position taken here was that high-cost companies would feel the greatest need to raise prices but they would not usually risk price increases lest they be the only ones to do so: only when more efficient (lower-cost) producers 'felt the pinch' would prices be raised (by them), and if their estimation of the market was right, the market price would be raised by all others; otherwise, others might hold back in an attempt to gain a larger market share.

8.4.2 Current Positions of the Industry

1. On the Relationship Between Cost and Market Price

The industry is at pains to point out that any relationship that may exist between crude oil cost and gasoline price at the pump is severed at a number of points, and that, therefore, it

²⁸ Residual oils and lighter oils are joint products

is not legitimate or correct to make mechanical connections between changes in crude oil prices and required changes in the retail price of gasoline. Many other factors, they argue, affect price determination at the pump. The implication is that one cannot say by how much the pump price should be reduced when the crude oil price changes.

2. On Whether Consumers are Getting a Fair Price

As far as the consumer is concerned, the point of view seems to be that consumers have already indicated that they are willing to pay much higher than current prices; they therefore are in fact getting a bargain at current price levels. No mention or distinction appears in that argument as regards the change in the relative price of gasoline and the change in nominal incomes through the consequent inflation.

The change in the relative price of gasoline has resulted in efforts of consumers to substitute away from it; as a consequence, world consumption has eventually fallen substantially. To argue that because consumers did pay high prices for large quantities of gasoline in the beginning stages of rising gas prices they therefore have indicated that gasoline is worth that much to them is to ignore the fact that substitution takes time. In short, since consumers and other users were caught with equipment that was quite inefficient in terms of gasoline use ³⁰ and since it takes time to change over to other, more

³⁰ The use of such equipment had been quite justifiable, given the low

efficient equipment, they appeared to value gasoline quite highly at the beginning of the high-price period, since they did pay high prices, with quantities remaining rather constant. Neither is it mentioned that the high oil prices had their effects on inflation rates; consequently it is not pointed out that the price of gasoline relative to nominal income did not rise by as much as indicated by the nominal price alone.

8.5 The Refiners

No contacts were made with this group for the preparation of this part of the report. The plan is to invite written submissions.

8.6 The Company Dealers

No contacts were made with this group for the preparation of this part of the report. The plan is to invite written submissions.

8.7 The Independent Dealers

No contacts were made with this group for the preparation of this part of the report. The plan is to invite written submissions.

cost of fuel in the past.

9. ANALYSIS

As has been indicated in the introduction to this Part, the question on the relationship between crude oil and retail gasoline prices may be broken down into three main components. The three subsections below each deal with one component of that question.

9.1 The Permanence of Low Crude Prices and the Price of Gasoline

There is little disagreement on the benefits of a permanent fall in the price of crude oil for the Canadian economy as a whole. Such benefits include higher economic growth, lower inflation, lower unemployment, lower government deficits,³¹ lower interest rates, higher corporate profits³² etc.

On the other hand, among the costs one may include the possibility that regional economies dependent mainly on oil may suffer serious consequences; the possibility that independents may be faced with revenue setbacks which may make them ripe for takeover by the major companies, thus deteriorating the competitive conditions in the industry; and the risk that lower oil prices may make borrower countries as well as domestic independents unable to service their debt, thus putting strain on the banking system.

³¹ Although the initial effect would be to reduce government tax revenues from oil.

³² Although the profits of the oil sector would suffer.

Most important of all, however, is the possibility that lower oil prices may jeopardize Canadian oil developments in the long-run.

For example, Hibernia (Newfoundland), Venture natural gas exploration (Nova Scotia), gas development in the Beaufort sea, and a \$3.2 bill. heavy oil upgrader (Lloydminster, Sask.) are among those projects that might suffer according to analysts, while Syncrude seems safe (with cash operating costs below \$20 U.S./bbl)³³

While, according to reports, crude oil prices will have to dip below \$10 U.S. a barrel to make production lose money, the same is not true of exploration and development; finding costs by major producers are reported to have averaged \$7-10 per barrel in 1981-84.

The reported consensus in the industry is that long-run development of oil resources requires a range of \$18-20 U.S., though it is not clear whether this price is required for Canadian resources as opposed to U.S. projects. Industry leaders seemed to avoid the question in informal conversation during this investigation.

Further investigation is needed to establish the range of crude oil prices in which the Canadian oil industry would be viable in the long term. The question is important because international markets may remain depressed and unstable for a long period; that is, the recent fall in crude oil prices may become permanent. The viability of the oil industry in this country will then depend on whether the industry can charge prices that cover its full costs, including exploration and

³³ Mr. Gordon Willmon, Vice-President and general manager of the oil-sands/coal Dept. of Esso Resources Canada. Quoted in the Globe and Mail, Jan 26, 1986.

development of new sources of oil.

In order to show the importance of the 'normal' price for the analysis and its conclusions, let us assume that current crude oil prices are below the 'normal' price, that is, the price necessary for long-term viability of the industry in Canada. The assumption will be used for exposition purposes only; eventual policy recommendations will have to be based on the actual range of the normal price.

Should international prices stay permanently (that is, for sufficiently long time) below the Canadian normal price, governments will eventually be faced with the option of either allowing the industry to use up its current reserves and wither away or the option of supporting domestic oil prices in some form.³⁴ In the first case we may consider the fall in prices as permanent, while in the second case the fall in domestic oil prices would be temporary.

On the other hand, should international prices eventually bounce back to levels above the Canadian 'normal' price, such considerations will not arise; the current price fall will then have to be considered temporary.

It will be recalled that the first question, under (a), in the Introduction had two parts: whether the recent fall in crude prices can be considered permanent and whether retail gasoline prices should reflect the fall fully, regardless of permanence.

³⁴ For example through an import tariff equal to the difference between the Canadian normal price and the lower international price level.

While it is an almost impossible task to predict where and when international prices may eventually settle, if at all, the above taxonomy of cases may help determine what action must be taken with regard to retail gasoline prices in each case.

Gasoline is a commodity which usually requires investment in a capital good before it can be used; the automobile is the most common example. Given that decisions on capital goods have long-term consequences (since such goods have long life) and given that the price of gasoline plays an important role in the choices of specific capital goods, it would be useful and proper policy to face consumers with the long-term normal price of gasoline at all times, so as to avoid consumer mistakes in this area. To wit, it is possible that temporary falls in crude oil prices, if reflected in retail gasoline prices, may lead consumers to decisions that will turn out wrong once gasoline prices bounce back. Only permanent falls, therefore, should be reflected in gasoline prices without risk of distorting long-term decisions; temporary falls in the crude oil price should not be allowed through to the retail level.

It may be objected that consumers are educated enough to tell a temporary from a permanent change in crude and gasoline prices; however, this presumption is rather dangerous, given the state of uncertainty in international markets and the lack of knowledge about the range of 'normal' price for Canadian oil. Perhaps after such a price has been estimated and widely communicated, consumers might be in a better position to make correct choices.

It may also be objected that should gasoline prices not reflect fully a temporary fall in crude prices the refining and marketing sectors of the oil industry would make above-normal, economically unjustified, profits. This objection could possibly be taken care of through measures that would have the oil companies return such excess profits back to the society, in some form or another; it should be added, however, that such measures are not easy to apply.

The above analysis establishes, it is hoped, the importance of determining the range of the 'normal' long-term price for Canadian oil. Unfortunately, the problem is not easy to solve particularly since if the normal price is found below the recent levels \$30-35 Canadian it will expose the industry to the criticism that it has made rather substantial above normal profits for almost a decade. Moreover, the task may extremely difficult per se to complete.

Finally, it is not difficult to see why instability of prices at the crude oil or the gasoline level does not help; widely fluctuating prices do not furnish good conditions for proper decision-making in production or in consumption, in a field which requires long-term commitments.

9.2 How Soon Should Gasoline Prices Follow Oil Prices?

9.2.1 The Logic of the Industry Arguments of the Seventies

The industry position in the seventies, when oil prices were on the rise has been given in section 4.4.1. According to these arguments, inventories are a necessary part of the business and therefore varia-

tions in their value should be passed on to prices immediately. Moreover, if we are to accept the industry's position in the seventies, variations in the value of inventory investment should be financed by variations in the rate of return. That is, now that crude prices are falling, gasoline prices should fall immediately causing a temporarily lower rate of return to the industry and returning the excess cash back to consumers who, according to the industry's position, should have paid it in the first place.

The above does not imply that the industry's position on inventory valuation and financing is accepted as valid in this investigation; but it is important to point out the implications of the industry's own argument for a period of lower crude prices.

9.2.2 Logic Versus Historical Reality

In any case, when crude oil prices were rising the Federal government did impose regulations and guidelines that delayed price changes at the national retail level by sixty days.³⁵ It would therefore be rather difficult for that government to take a reversed position now that prices are falling. All this is unfortunately independent of the logical accuracy and acceptability of arguments on inventory valuation and financing, but it is part of the historical reality of economic policies and must therefore be taken seriously into account.

³⁵ July 26, 1978 Communique of Mr. A. Gillespie, Minister of EMR, Ottawa.

Provincial Governments may still have some room for re-examination and debate of the questions related to inventory valuation and financing when prices change; a full analysis of these questions will, therefore, be undertaken and reported later in this investigation.

Given the above considerations, the only question that remains on this matter is the specific length of the inventory lag for the city of Winnipeg.

9.2.3 How Long is the Inventory Lag in Winnipeg?

The considerations brought forward in this section are only tentative and as such may be modified after further investigation into the matter of inventories.

As mentioned above, the Federal Government established a 60-day delay in the rise of the price of gasoline in 1978, when crude prices were rising. This delay was a national one, and represented a compromise on both the amount of inventories regarded as absolutely necessary and on the various lengths of inventory lags by company and location across the country.

For a specific location such as Winnipeg one may be able to make some modifications to this lag, from various considerations. For example, according to industry documents, Esso has a 55-60 day inventory, Texaco has a 33-day inventory and Gulf had a 42-day stock in the Prairies in the late seventies. These companies together represent a total of 36% of the gasoline market in Winnipeg.³⁶ A weighted average

³⁶ Data from Kent Marketing Services Ltd, for 1985

of the inventory days of each company by their share of the market, with the rest of the market assumed to have a 60-day stock yields a shorter delay period than sixty (fifty-five) days. Moreover, scattered pieces of information about inventories in Western Canada in recent months suggest that inventories in Winnipeg may be closer to the 40-day mark than to sixty. Finally, expectations of lower crude prices by oil companies must have been in place by December 1985, thus causing a lower inventory amount, according to their own arguments as presented in section 4.4.1 (1b).

In summary, indications seem to point towards inventory amounts lower than sixty-days stock; however, these are only indications, and more study of this area would be necessary so that 'harder' data may be collected, and action recommended on that basis.

In order to show the importance of the inventory lag to the question of the expected price fall in gasoline prices, especially when crude prices tumble the way they have done recently, calculations will be done not only on the basis of a sixty-day but also for a weighted average fifty-five-day inventory for the city of Winnipeg, as noted above.

9.3 By How Much Should Retail Gasoline Prices Fall?

9.3.1 Retail Versus Normal Prices

The first task here is to discuss the position of the industry, according to which a mechanical 'flow-through' calculation of lower crude costs onto retail gasoline prices is not proper, because such

prices are determined by many factors other than cost (see section 4.4.1(5) and 4.4.2(1)).

The 'price' that the industry refers to in their argument is the one prevailing in the market at any point of time. There is no attempt to distinguish between 'market period' and 'medium run' or 'long-run' price in these arguments; on informal contact industry leaders either denied that the calculation of such 'normal' prices is possible or doubted their operationality. However, the industry does state that "in the long run, fair prices with a reasonable return to the retailer and the oil companies encourage them to stay in the business."³⁷ They also have implied that the prices posted represent their view of 'full cost plus reasonable return' prices; they may, therefore, be taken to mean that posted prices show their view of 'normal' prices.

It should be noted that, while these posted prices have reflected the smallest increases in costs, they have occasionally not followed cost decreases, not even with the lag claimed for high-priced inventory depletion. Such, for example is the case for Imperial Oil's Price Analysis sheet, attached as Figure 7 to this report. The sheet shows that although costs fell at least twice between May and August 1985, the 'normal price' did not.

Moreover, posted prices have not been sufficiently lowered in response to the lower price of crude, even after the sixty-day inventory lag which is now claimed necessary by the industry. See Figure 8; crude oil prices have been falling since November 28, while posted

³⁷ From the pamphlet "Texaco answers your questions about gasoline prices"

prices started responding only from the 21st of February, and then only by two cents/l.³⁸ This is almost three months after the beginning of a substantial price fall from \$26.30 (Nov. 28, 1985) to \$12.18 (Feb. 21, 1986), i.e., a fall by \$14.12.

Finally, and most importantly, the connection between posted prices and actual retail prices must be made in terms of changes in competitive conditions; for example when there is a price war the retail price falls sometimes far below the normal posted price, and when the war ends the retail price usually rises over its normal range for some time. See figure 8A.³⁹ This suggests (along with similar statements by the industry; see the Texaco pamphlet quoted above) that the market retail price is targeted to track the average normal posted price in the longer run. It also suggests, with respect to the events in recent months, that actual prices should follow normal prices fairly closely, since no major disruptions (such as price-wars, etc) have occurred in the Winnipeg market during that time.

We may therefore conclude that, in the absence of major changes in competitive conditions of the Winnipeg market during the last five months it is fairly safe to apply the flow-through calculation not only to normal but also to regular retail market prices in Winnipeg,

³⁸ Incidentally, keeping posted prices high does cost the companies money in terms of taxes applied at the wholesale level.

³⁹ The Figure shows that the actual market price rarely lies above normal; the implications of this relationship for the long-term viability of the oil industry belie both the fact of its existence and the fact of reported profits in the long run. For the purposes of the argument in the text, however, this question does not matter; all that is necessary is that the actual price 'track' the normal, which is indeed the case.

for the period under consideration.

9.3.2 The Cost-price Relationship

From the industry's own calculations in section 4.4.1(4) above we have that a \$1 fall in crude oil prices corresponds to .69 c/l of product if all prices are to be reduced uniformly, and to .73 c/l if gasoline prices are to take the lead.

These magnitudes are comparable to the .682 c/l allowed by the July 26, 1978 communique issued by the Federal Minister of Energy, Mines and Resources when prices were rising by \$1. This increase was to be effected uniformly on all refined oil products.

In our calculations we shall use both the industry's magnitudes and those of the Ministry as given above.

9.3.3 Calculation of the Fall in Crude Oil Prices

Since we have no basis for determination of a normal oil price for the industry as yet, the analysis of this section will be done in abstraction from the long-term concerns expressed in section 9.1 above.

Crude oil prices began falling around the end of November 1985. For the purpose of calculation of the expected fall in gasoline prices in response to this event, we shall use 'benchmark' oil prices at which we shall assume that the inventory of the oil companies was acquired. This is as practicable an approach as any other, short of working out the detailed calculation used in inventory evaluation

methods such as FIFO or LIFO: such methods require detailed data of purchase and disposition of inventory by company, which is not available at this time.

Two such 'benchmark' prices will be used: one is the lowest price in the market during the period from June 28 to December 27, 1985, and the other will be the average price in the same period.

The implication of assuming that inventory on hand has been acquired at the lowest possible price is that the company went out and bought the entire inventory on exactly the day in which the crude price was the lowest during the June to December period. Therefore, the calculated fall in the crude price from such a benchmark is less than otherwise; in fact it is the smallest fall that can be calculated under any conditions, since it assumed that the initial cost of inventory before prices started sliding was the lowest possible.

As such, therefore, this number establishes the absolute minimum reduction which would have passed through to inventories of oil companies and, consequently, the absolute minimum reduction implied for retail prices as a consequence of lower material costs. This, then, is the best case for the oil companies' argument, though it is obviously unreal.

On the other hand, using the average price for the period implies that inventory on hand has been acquired uniformly during that period, at the various prices of each trading day. Such a concept is more realistic than the lowest possible price, since it allows for sequential purchases of inventory over time, which approximates the process better.

One could, for symmetry, also consider the other polar hypothesis that all inventory was acquired at the highest possible price in the period; this would be the worst case for the oil companies' argument. However, this would be no more realistic than the lowest possible price, and it would only serve to provide a maximum to the expected fall in gasoline prices, as unrealistic as the minimum implied by the lowest possible price. The lowest possible price, on the other hand, is considered here only as a means of making the other calculations more defensible, in the face of lack of detailed acquisition and disposition data from the companies.

The lowest possible and the average acquisition price will be noted for three separate types of oil: Canadian Par in Chicago, WTI (Chicago) and Manitoba Crude.

Beyond these, the averages of all three oils will also be considered.

Table 9 summarizes the calculations of the fall in crude oil price which would be relevant for passing to the retail price of gasoline under various assumptions. For example, line 8 of the Table gives, in that order, the lowest Chicago price for Can Par oil between June and December 1985 at \$37.53 Canadian,⁴⁰ the average price in the same period at \$38.45, and the prices on Feb. 7 and 14 at \$25.77 and \$23.86 respectively. Columns F and G then show the fall in crude price up to Feb. 7/86 (Column F=B-D, i.e., \$11.76, and column G=C-D, i.e., \$12.68), while columns H and I give falls in price up to February 14,

⁴⁰ The Table is in Canadian currency, with fluctuations in the exchange rate taken into account for every price.

1986 (H=B-E and I=C-E). Similar remarks hold for lines 9 and 10, while line 12 shows averages of the same magnitudes. Finally, line 13 shows alternative magnitudes obtained by different averaging procedures.⁴¹

From the Table, one sees that the range of fall in crude oil prices that should be expected to be passed onto retail gasoline prices ranges from a minimum of \$11.65 (Column F, row 9, which would then assume that the whole inventory in Manitoba is WTI obtained at the minimum price between June-Dec. 1985) to a maximum of \$16.90 (which assumes again only Chicago crude obtained at the average price of \$39.53 and outstanding as of Feb. 14, 1986).

Consideration of averages (from rows 12 and 13) yields a minimum change of \$11.71 and a maximum of \$15.43 respectively.

9.4 Calculation of Expected Falls in Gasoline Retail Prices

Table 10 summarizes the results. Two situations are considered, one where a \$1 fall in crude oil prices corresponds to a .69 c/l for all refined products (Cases I and II) and another in which the gasoline price takes the lead (i.e., other product prices do not fall by the same amount) and its price falls by .73 c/l for every \$1 fall in crude prices (Cases IA and IIA). Each of the numbers in Cases I and II (in Canadian cents per litre) is derived from the corresponding columns of

⁴¹ Line 13 gives the average of each column, that is, the average of the differences, while line 12 gives the differences of the averages, that is, row differences. The two magnitudes are normally the same, except that the lack of a minimum price for Manitoba Crude in column B makes for differences in this Table.

Table 9 by multiplication with .69 c/l. For cases IA and IIA the multiplier is .73 c/l.

Cases I and IA correspond to the expected price decrease in gasoline 60 days after February 7, 1986, that is, on April 7, 1986. Cases II and IIA show expected decreases on the same date⁴² on the assumption that the inventory lag would be not sixty but fifty five days.

From the Table, and under the .69 c/l flow-through, the expected fall in retail gasoline prices on April 7, 1986 ranges from an absolute minimum of 8.08 c/l to a maximum of 10.65 c/l. Under the .73 c/l calculation, the reductions range from 8.54 c/l to 11.26 c/l respectively. Finally, decreases based on the 60-day inventory lag and on average prices of inventory acquisition (column G) give reductions in the retail price of gasoline from 9.22 c/l to 9.75 c/l.

⁴² More precisely on April 9, 1986

PART III

CONCLUSIONS AND RECOMMENDATIONS

10. CONCLUSIONS

10.1 On matters relating to inventories

The logic of the industry's position with respect to financing of inventory investment implies that consumers should provide the extra capital required for additional investment necessitated by higher prices of materials. This would happen through higher retail prices, and would temporarily increase the rate of return on existing capital. This argument has the unfortunate implication that consumers, and not the financial sector, should provide the corporation with additional investment capital, and this not through a normal rate of return but through a temporary rise in it. The argument seems almost equivalent to a corporation increasing its prices for a while in order to build another outlet, or an additional plant; this should normally be done through either re-investment of normal profits or through additional financing. There seems to be no basic reason why additional inventory investment due to higher material prices should be handled differently. In any case, if it is to be financed by higher prices, the logic suggests that when prices fall the retail price of the produced goods should follow suit immediately, thus returning the capital that consumers provided to the corporation back to them.

However, the historical reality of Canadian oil prices, and particularly the fact that they have made a full circle from low to high levels and back, makes it necessary to consider both the positions of

the industry and the government not only when prices are falling, as is the case now, but also when prices were rising, as in the seventies. One then finds that the tables have turned and many of the arguments are now reversed; one also finds that the industry has had to submit to regulations when prices were on the rise, and questions of fairness arise if totally reverse logic is to be applied for regulations now that prices are falling. This is unfortunately independent of whether the industry's or the regulators' position in the past was right or wrong. Thus, matters that should be solely resolved by analysis first are found to be almost pre-determined by historical and fairness considerations. A typical example here is the problem of whether changes in the value of inventories should be immediately reflected onto prices, or whether such changes proceed with sufficient lags to allow inventory liquidations at acquisition prices.

10.2 On the relationship between cost and price

The argument of the industry that market price is driven by competitive forces and therefore cost plays little role in its determination tends to understate the basic relationship between long-term and short-term factors. While it is true that short-term market prices may differ from normal long-term prices, it is also true that the former gravitate towards the latter; it is also true that unless changes in competitive conditions occur, any changes in normal prices will be passed onto market prices. It is this latter consideration that must be addressed in any arguments attempting to disengage cost changes from changes in market prices.

10.3 On consumer valuation of gasoline

The position of the industry that consumers are 'getting a bargain' at current gasoline prices tends to ignore not only the question of durable equipment used to consume gasoline and the associated inelasticity of substitution that occurs when gasoline prices rise, but also the causal effect of higher gasoline prices on inflation and nominal incomes.

10.4 On whether retail gasoline prices should be reduced

The main conclusion from the analysis of matters relating to crude oil prices and normal as well as retail gasoline prices in Winnipeg in recent months is that prices at the retail level have not fallen so much as might be expected under quite conservative assumptions.

More specifically, it is not unreasonable to assume that inventories were acquired at the average price for all oils during the last six months of 1985; possibilities are strong that inventories were acquired at higher than average prices, since the latter did rise a little (about \$5 for WTI) between June and December 1985. Neither is it unreasonable to use a weighted average of days of inventory given by the oil companies for Winnipeg, assuming that others for which there are no data (including the independents) would hold a sixty-day stock. This suggests that a fifty-five day inventory is quite possible for Winnipeg. Finally, diesel oil prices do not appear to have responded in the same measure as gasoline. This suggests that it is reasonable to suppose that oil companies have let gasoline take the lead in the

price fall; therefore, the application of .73 c/l flow-through is more or less justified.

Prices fell by 9 c/l between February and April 3, 1986, while the analysis of possibilities herein indicates that they could have fallen from a low of 9.22 c/l to a high of 11.26 c/l, using price averages. Reducing the inventory lag from sixty to 55 days brings the expected fall from 9.22 c/l to 10.65 c/l, and consideration of uneven price falls between diesel and gasoline increases the expected fall to 11.26 c/l. It is therefore not unreasonable to suggest that the 9 c/l decrease recorded until April 3, 1986, is on the low side; prices could easily have fallen another 1.5 c/l in the same period.

Oil prices have fallen further quite substantially since February 14, 1976. For example, WTI prices stood at \$17.92 on March 7, 1986, and Can Par was priced at \$18.76, while Manitoba crude was \$15.64. On an average price basis (\$17.44) the total price fall is \$37.99 (the average price between June and December 1985) minus \$17.44, that is, \$20.55, and at .69 c/l and a sixty-day lag, prices of gasoline should be down by about 14 c/l by May 8, i.e., another 5 c/l above the nine cents already in place. Given the relative reluctance displayed by the price-setting mechanisms in the gasoline market, monitoring is needed to ensure proper price changes.

It should also be noted that for every day's or week's delay in reduction of retail gasoline prices oil companies would be making excess profit equal to the required but not effected price fall times the sales of the period. This excess profit may be calculated from data on sales per period, should such delays occur in the future.

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Finally, the fact that diesel oil prices have not followed suit raises serious questions since it implies that groups of users, such as farmers, are asked to pay higher prices than users of other by-products, a case of possible price discrimination.

10.5 On further study required

Below is a list of matters yet to be investigated; their order of presentation implies their relative importance.

1. Crude Oil and Gasoline Prices:

- a) We must study the market structure in the production, refining and distribution sectors of the oil industry; how this structure affects conduct and performance in the industry, if at all; and what, if anything, the Province could do to improve competitive conditions where they may not be adequate.
- b) All interested parties⁴⁹ ought to be invited to submit written briefs⁵⁰ so that the picture of the industry may become complete.
- c) For a full and less conservative estimate of when retail prices must fall in response to lower crude oil prices, both the size and the composition of current inventories of oil companies in Manitoba⁵¹ must be further investigated. If in-

⁴⁹ That is, the crude oil producers, the integrated companies, the refiners, the company dealers, the independent dealers, and perhaps the public.

⁵⁰ The substance of which may be generated during informal meetings with them.

ventories are found lower than the conservative number of fifty-five days used in this interim report, or if they are found to have been acquired at prices higher than that assumed herein, the oil industry will be shown to have made above normal profits at the expense of consumers and other users of crude oil by-products.

- d) It is useful to examine if the slow and inadequate response of gasoline prices in Manitoba, compared to prices in other Provinces and the U.S., is due to more factors than simply less competition in this Province compared to the U.S and to other Provinces.⁵²
- e) In order to determine appropriate reductions in prices of crude oil by-products other than gasoline we must examine the question of pricing of joint products (gasoline versus fuel oil, etc) and the associated question of expected revenue from sales of all by-products obtained from a barrel of crude oil.⁵³
- f) To ensure viability of oil production in the Province and in Canada the long-term 'normal' price of crude must be determined, and instability in the market must be reduced; also, retail prices must reflect the 'normal' price.⁵⁴

⁵¹ That is, how many days' inventories there are in the Province, and at what prices these inventories were acquired.

⁵² How much difference do taxes make, for example? Are inventories different in the U.S. or in other Provinces?

⁵³ The analysis in this report assumes that the prices of all by-products are reduced at the same rate as gasoline; if this has not happened, gasoline prices must fall further than calculated herein.

⁵⁴ This may be more appropriately studied at the Federal Government

2. Price differentials in Manitoba:

The question of price differentials in various areas of the Province has yet to be examined by this commission; it should perhaps be noted here that the questions raised in (1) above are not unrelated to this matter, since they would help determine 'proper' price levels for Winnipeg; these prices would then form the basis for the determination of 'proper' prices elsewhere in Manitoba, based on justifiable differential costs.

3. Regulatory matters:

Finally, there are the questions of what regulatory powers the Provincial Government has or should have, and whether it should use such powers to regulate retail gasoline prices on an ongoing basis.

11. RECOMMENDATIONS

1. It is recommended that the Government should consider taking action to regulate gasoline prices to a level ranging between 9 c/l and 10.5 c/l lower than they were on February 12, 1986.

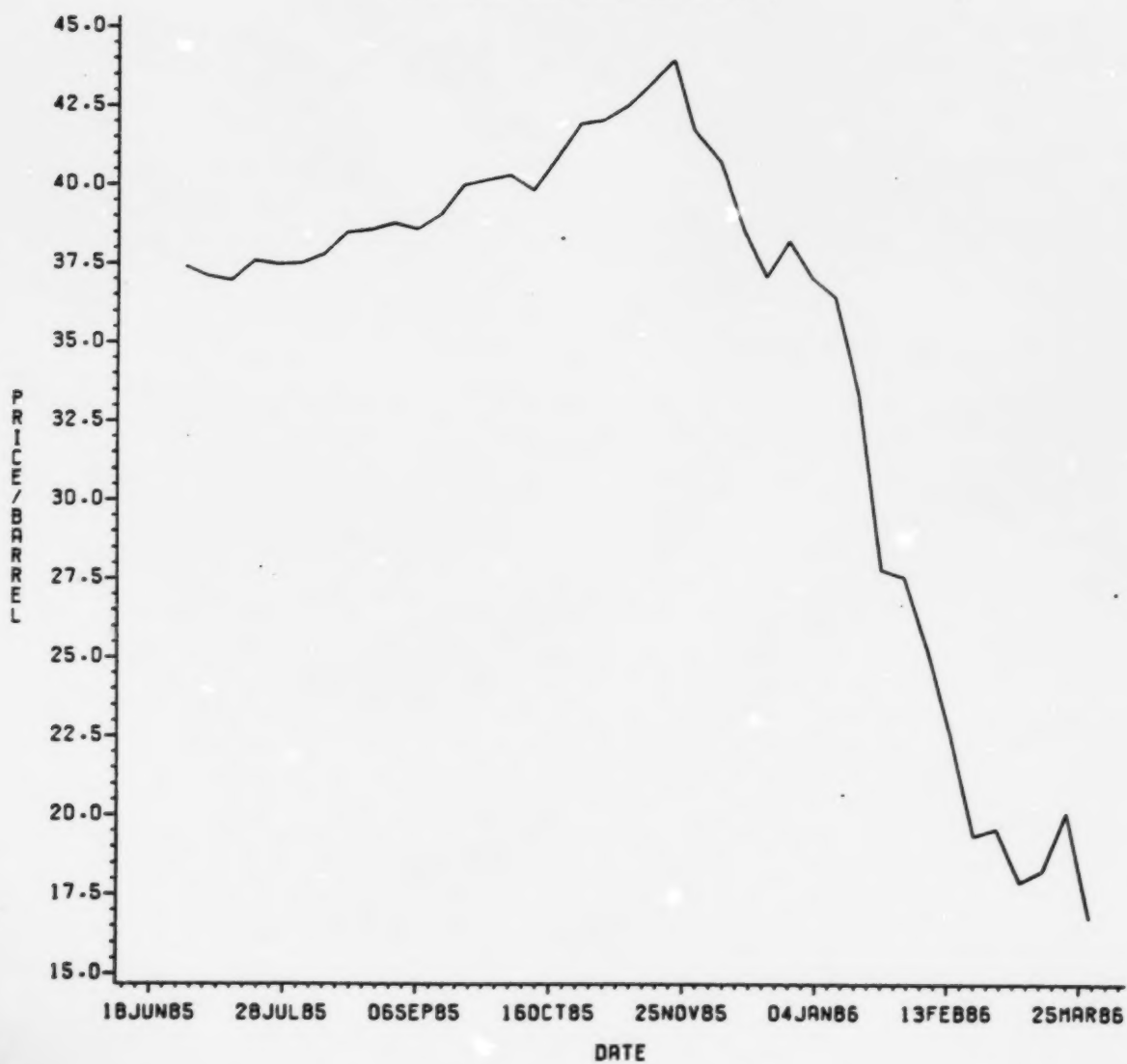
It is further recommended that, since the matter of regulatory form has not been studied as yet, the government take a one-time action on the above recommendation, and that further it monitor retail gasoline prices for the expected responses to falls in crude prices beyond February 14, 1986, and the associated falls in retail gasoline prices after April 7, 1986.

level.

2. Finally, it is reported that, as per the appropriate section under 'conclusions' of this interim report, further study is needed into this specific matter, apart from the other matters yet to be reported upon according to the order in council for this investigation.

PART IV
FIGURES AND TABLES

FIGURE 1
CRUDE OIL PRICES
CHICAGO (CANADIAN DOLLARS/BARREL)



SYMBOL 1 (THIN LINE) = WEST TEXAS CRUDE

TABLE 1 - CRUDE OIL PRICES (CHICAGO)
(CANADIAN DOLLARS/BARREL)

OBS	DATE	WEST TEXAS CRUDE OIL PRICE
1	28JUN85	37.43
2	05JUL85	37.12
3	12JUL85	36.99
4	19JUL85	37.61
5	26JUL85	37.51
6	02AUG85	37.52
7	09AUG85	37.82
8	16AUG85	38.51
9	23AUG85	38.60
10	30AUG85	38.79
11	06SEP85	38.63
12	13SEP85	39.10
13	20SEP85	40.03
14	27SEP85	40.17
15	04OCT85	40.33
16	11OCT85	39.86
17	18OCT85	40.91
18	25OCT85	41.97
19	01NOV85	42.11
20	08NOV85	42.54
21	15NOV85	43.25
22	22NOV85	44.00
23	28NOV85	41.82
24	06DEC85	40.82
25	13DEC85	38.66
26	20DEC85	37.13
27	27DEC85	38.29
28	03JAN86	37.11
29	10JAN86	36.51
30	17JAN86	33.40
31	24JAN86	27.84
32	31JAN86	27.61
33	07FEB86	25.34
34	14FEB86	22.63
35	21FEB86	19.37
36	28FEB86	19.60
37	07MAR86	17.92
38	14MAR86	18.27
39	21MAR86	20.13
40	28MAR86	16.76

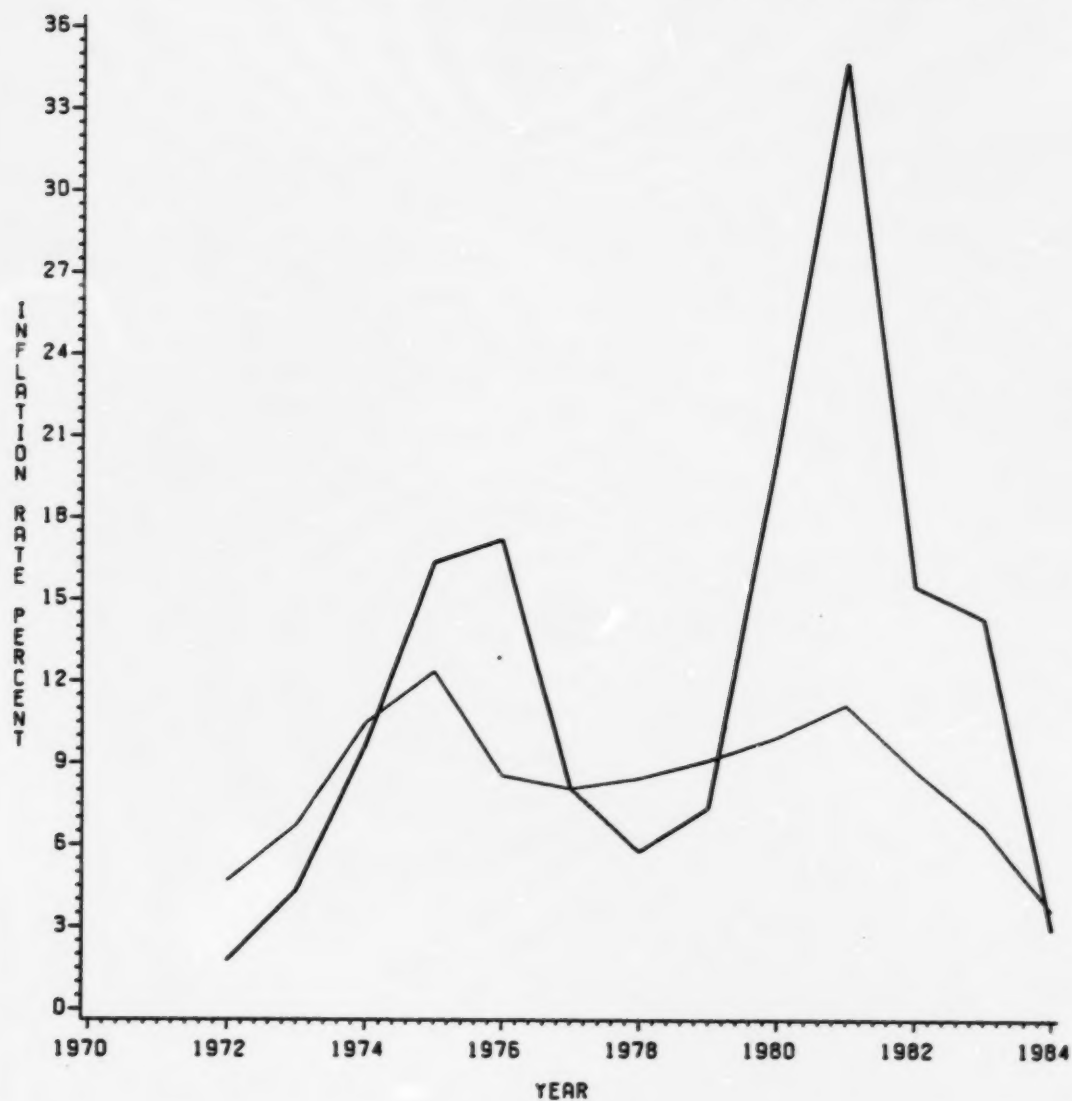
TABLE 2 - CRUDE OIL AND MOTOR GASOLINE PRICES, U.S.A.
(UNITED STATES DOLLARS/BARREL)

OBS	DATE	WEST TEXAS CRUDE OIL	EAST COAST CARGOES MOTOR GASOLINE
1	28JUN85	27.35	33.81
2	05JUL85	27.35	33.81
3	12JUL85	27.90	33.81
4	19JUL85		34.86
5	26JUL85	27.75	33.81
6	02AUG85	27.75	32.40
7	09AUG85	27.80	31.64
8	16AUG85	28.45	31.61
9	23AUG85	28.50	32.87
10	30AUG85	28.40	32.13
11	06SEP85	28.20	32.55
12	13SEP85	28.50	32.34
13	20SEP85	29.10	32.13
14	27SEP85	29.40	33.08
15	04OCT85	29.50	32.76
16	11OCT85	29.15	32.76
17	18OCT85	29.97	35.07
18	25OCT85	30.70	33.73
19	01NOV85	30.80	33.51
20	08NOV85	30.90	33.81
21	15NOV85	31.42	34.96
22	22NOV85	31.98	33.39
23	28NOV85	30.22	34.08
24	06DEC85	29.25	32.55
25	13DEC85	27.80	30.93
26	20DEC85	26.60	28.79
27	27DEC85	27.35	28.79
28	03JAN86	26.45	29.19
29	10JAN86	26.20	29.08
30	17JAN86	23.85	28.66
31	24JAN86	19.70	26.14
32	31JAN86	19.40	26.35
33	07FEB86	18.15	21.42
34	14FEB86	16.20	20.51
35	21FEB86	13.95	19.40
36	28FEB86	13.80	19.02
37	07MAR86	12.75	17.22
38	14MAR86	13.15	17.85
39	21MAR86	14.40	.
40	28MAR86	12.00	.

TABLE 3 - CRUDE OIL AND WINNIPEG GASOLINE PRICES
(CANADIAN CENTS/LITRE)

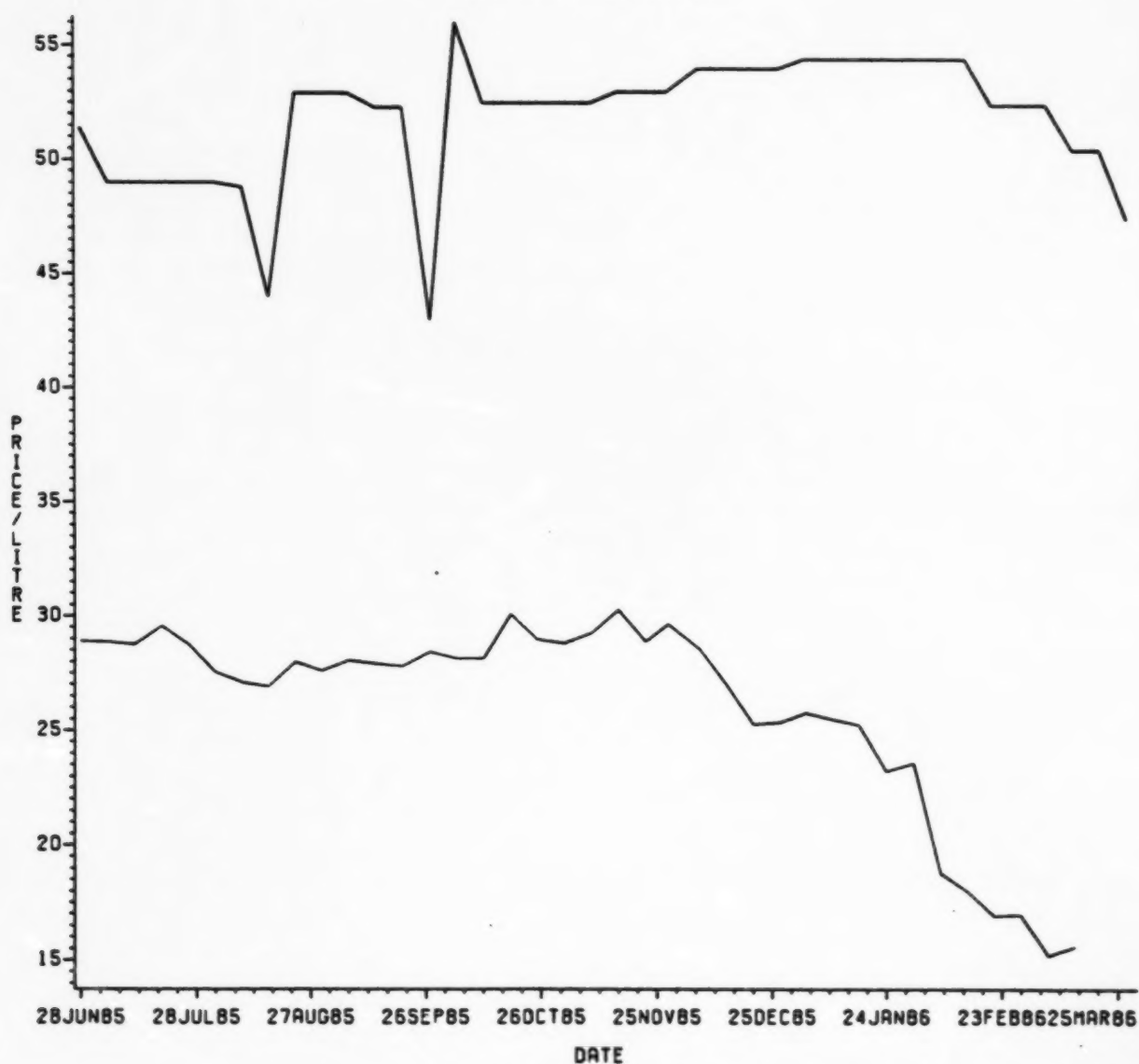
OBS	DATE	WEST TEXAS CRUDE OIL (CHICAGO)	WPG. GASOLINE REGULAR LEADED SELF SERVE
1	28JUN85	23.5409	51.4
2	05JUL85	23.3459	49.0
3	12JUL85	23.2642	49.0
4	19JUL85	23.6541	49.0
5	26JUL85	23.5912	49.0
6	02AUG85	23.5975	49.0
7	09AUG85	23.7862	48.8
8	16AUG85	24.2201	44.0
9	23AUG85	24.2767	52.9
10	30AUG85	24.3962	52.9
11	06SEP85	24.2956	52.9
12	13SEP85	24.5912	52.3
13	20SEP85	25.1761	52.3
14	27SEP85	25.2642	43.0
15	04OCT85	25.3648	56.0
16	11OCT85	25.0692	52.5
17	18OCT85	25.7296	52.5
18	25OCT85	26.3962	52.5
19	01NOV85	26.4843	52.5
20	08NOV85	26.7547	52.5
21	15NOV85	27.2013	53.0
22	22NOV85	27.6730	53.0
23	28NOV85	26.3019	53.0
24	06DEC85	25.6730	54.0
25	13DEC85	24.3145	54.0
26	20DEC85	23.3522	54.0
27	27DEC85	24.0818	54.0
28	03JAN86	23.3396	54.4
29	10JAN86	22.9623	54.4
30	17JAN86	21.0063	54.4
31	24JAN86	17.5094	54.4
32	31JAN86	17.3648	54.4
33	07FEB86	15.9371	54.4
34	14FEB86	14.2327	54.4
35	21FEB86	12.1824	52.4
36	28FEB86	12.3270	52.4
37	07MAR86	11.2704	52.4
38	14MAR86	11.4906	50.4
39	21MAR86	12.6604	50.4
40	28MAR86	10.5409	47.4

FIGURE 4
CPI AND GASOLINE PRICE INFLATION, MANITOBA



SYMBOL1 (THIN LINE) = CPI INFLATION RATE
SYMBOL2 (THICKER LINE) = GASOLINE PRICE INFLATION RFOOTNOTE3 CANSIM M 1932 SER D487240 D487395

FIGURE 5
 U.S.A. AND WINNIPEG GASOLINE PRICES
 (CANADIAN CENTS/LITRE)



SYMBOL 1 (THIN LINE) = EAST COAST CARGOES, MOTOR GASOLINE
 SYMBOL 2 (THICKER LINE) = WINNIPEG REGULAR LEADED SELF SERVE GASOLINE

TABLE 5 - U.S.A. AND WINNIPEG GASOLINE PRICES
(CANADIAN CENTS/LITRE)

OBS	DATE	EAST COAST CARGOES MOTOR GASOLINE	WPG. REGULAR LEADED GASOLINE SELF SERVE
1	28JUN85	28.8916	51.4
2	05JUL85	28.8618	49.0
3	12JUL85	28.7619	49.0
4	19JUL85	29.5543	49.0
5	26JUL85	28.7449	49.0
6	02AUG85	27.5502	49.0
7	09AUG85	27.0711	48.8
8	16AUG85	26.9102	44.0
9	23AUG85	28.0015	52.9
10	30AUG85	27.6015	52.9
11	06SEP85	28.0421	52.9
12	13SEP85	27.9080	52.3
13	20SEP85	27.7995	52.3
14	27SEP85	28.4259	43.0
15	04OCT85	28.1654	56.0
16	11OCT85	28.1715	52.5
17	18OCT85	30.1051	52.5
18	25OCT85	28.0036	52.5
19	01NOV85	28.8144	52.5
20	08NOV85	29.2744	52.5
21	15NOV85	30.2679	53.0
22	22NOV85	28.8939	53.0
23	28NOV85	29.6625	53.0
24	06DEC85	28.5683	54.0
25	13DEC85	27.0531	54.0
26	20DEC85	25.2773	54.0
27	27DEC85	25.3497	54.0
28	03JAN86	25.7588	54.4
29	10JAN86	25.4898	54.4
30	17JAN86	25.2460	54.4
31	24JAN86	23.2301	54.4
32	31JAN86	23.5824	54.4
33	07FEB86	18.8092	54.4
34	14FEB86	18.0191	54.4
35	21FEB86	16.9414	52.4
36	28FEB86	16.9924	52.4
37	07MAR86	15.2218	52.4
38	14MAR86	15.5991	50.4
39	21MAR86	.	50.4
40	28MAR86	.	47.4

FIGURE 6A
MAJOR OIL COMPANIES
DISTRIBUTION OF TOTAL OUTLETS
SUM OF OUTLETS GROUPED BY COMPANY

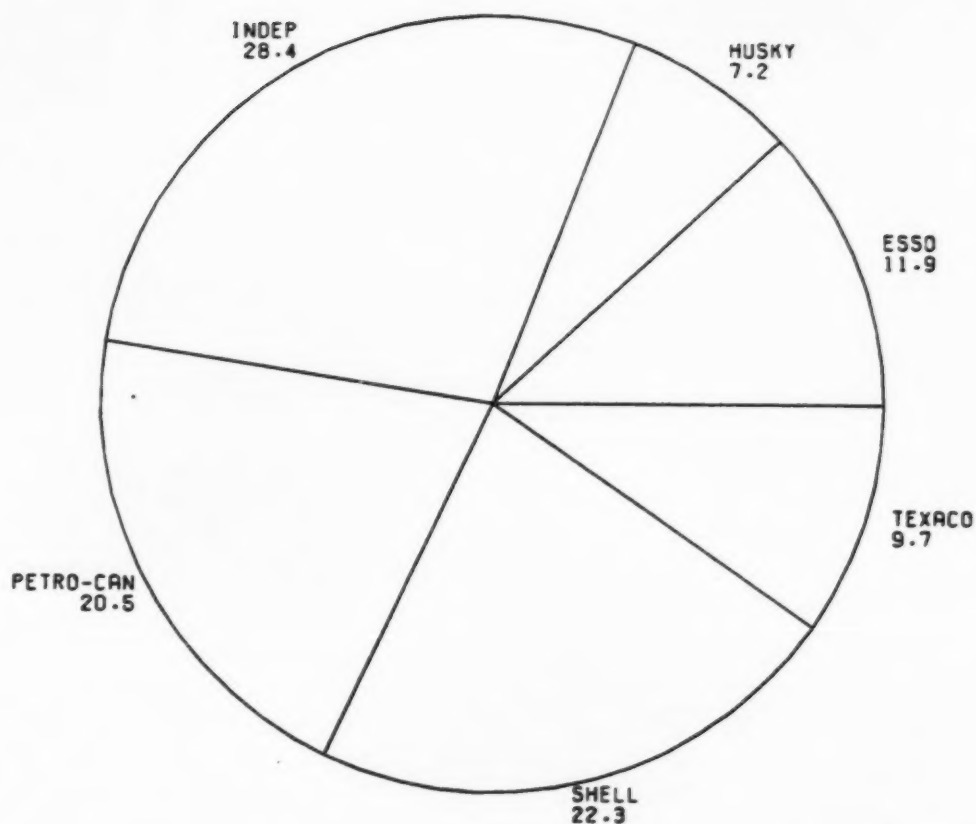
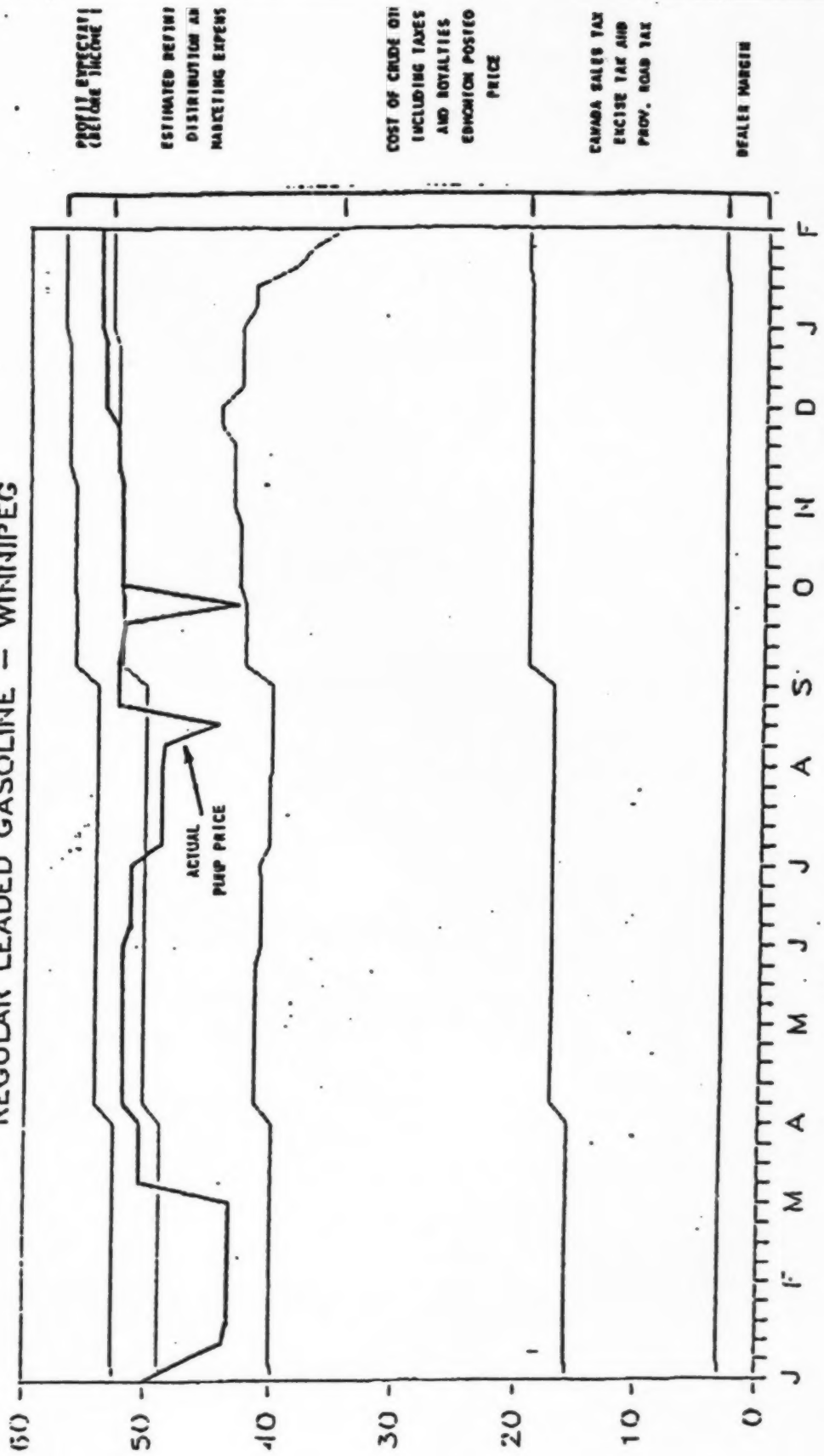


TABLE 6
MAJOR OIL COMPANIES AND THEIR PERCENTAGE OF:
(1) TOTAL OUTLETS, (2) TOTAL VOLUME

OBS	COMPANY	OUTLETS	VOLUME
1	ESSO	11.9	15.1
2	HUSKY	7.2	1.8
3	INDEP	28.4	29.5
4	PETRO-CAN	20.5	23.5
5	SHELL	22.3	23.4
6	TEXACO	9.7	6.7
		=====	=====
		100.0	100.0

FIG. 7
 PRICE ANALYSIS
 REGULAR LEADED GASOLINE - WINNIPEG



YEAR 1985 & JAN 1986

1 PROFIT EXPECTATION PROVIDES A RETURN ON ESTIMATED REFINING AND MARKETING CAPITAL EMPLOYED FOR RETAIL GASOLINE SALES.

FIGURE 6B
MAJOR OIL COMPANIES
DISTRIBUTION OF TOTAL VOLUME
SUM OF VOLUME GROUPED BY COMPANY

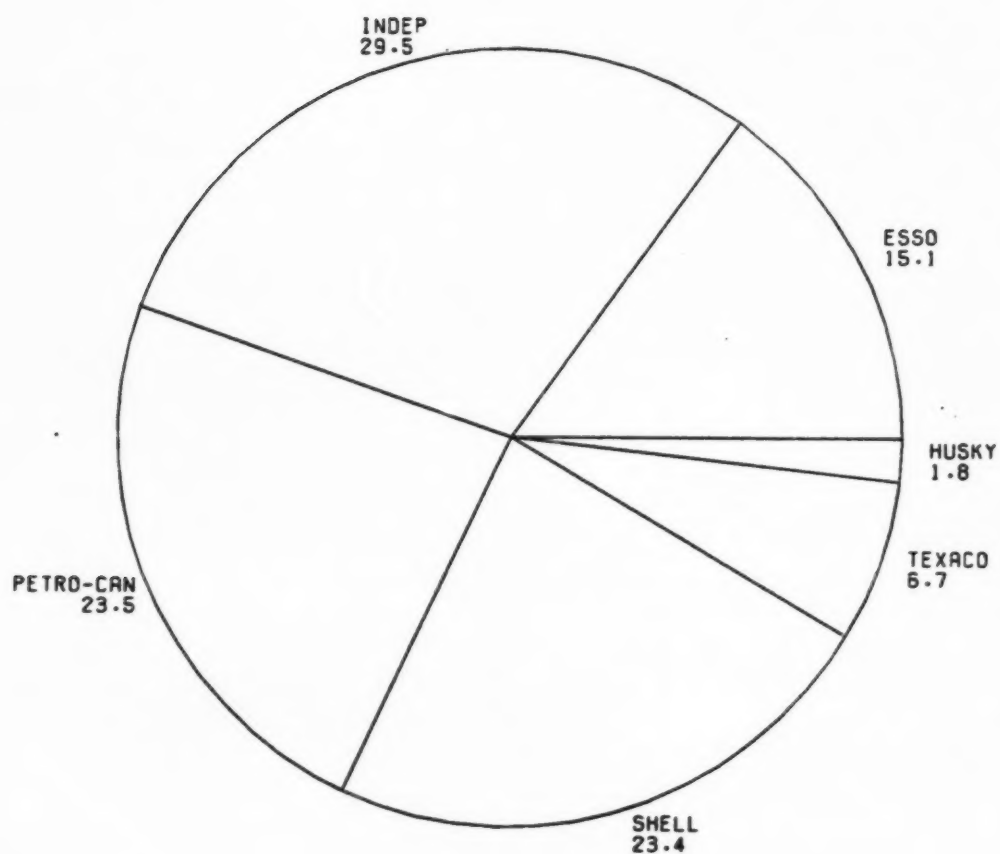
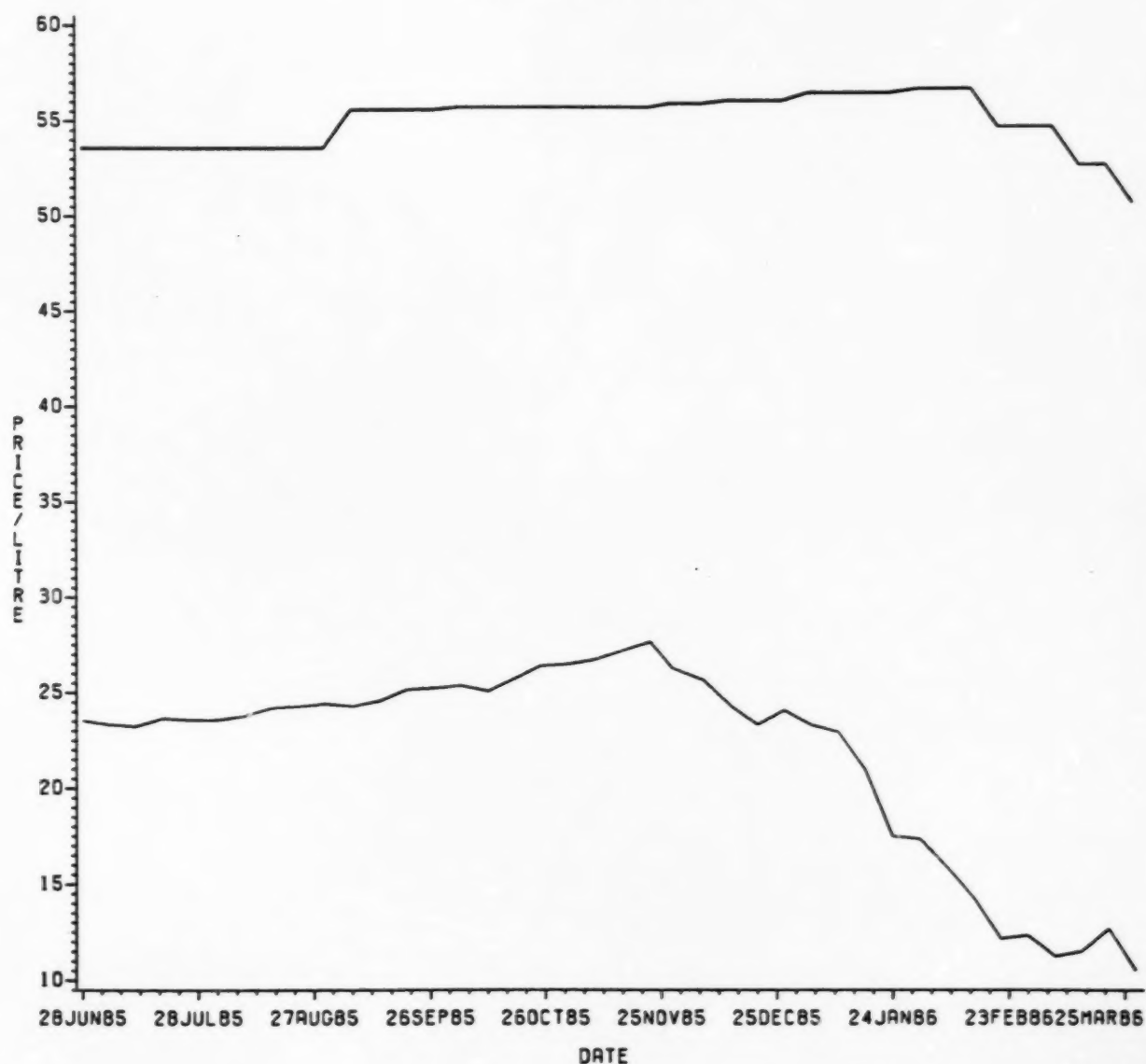


FIGURE 8
CRUDE OIL AND WINNIPEG NORMAL GASOLINE PRICES
(CANADIAN CENTS/LITRE)

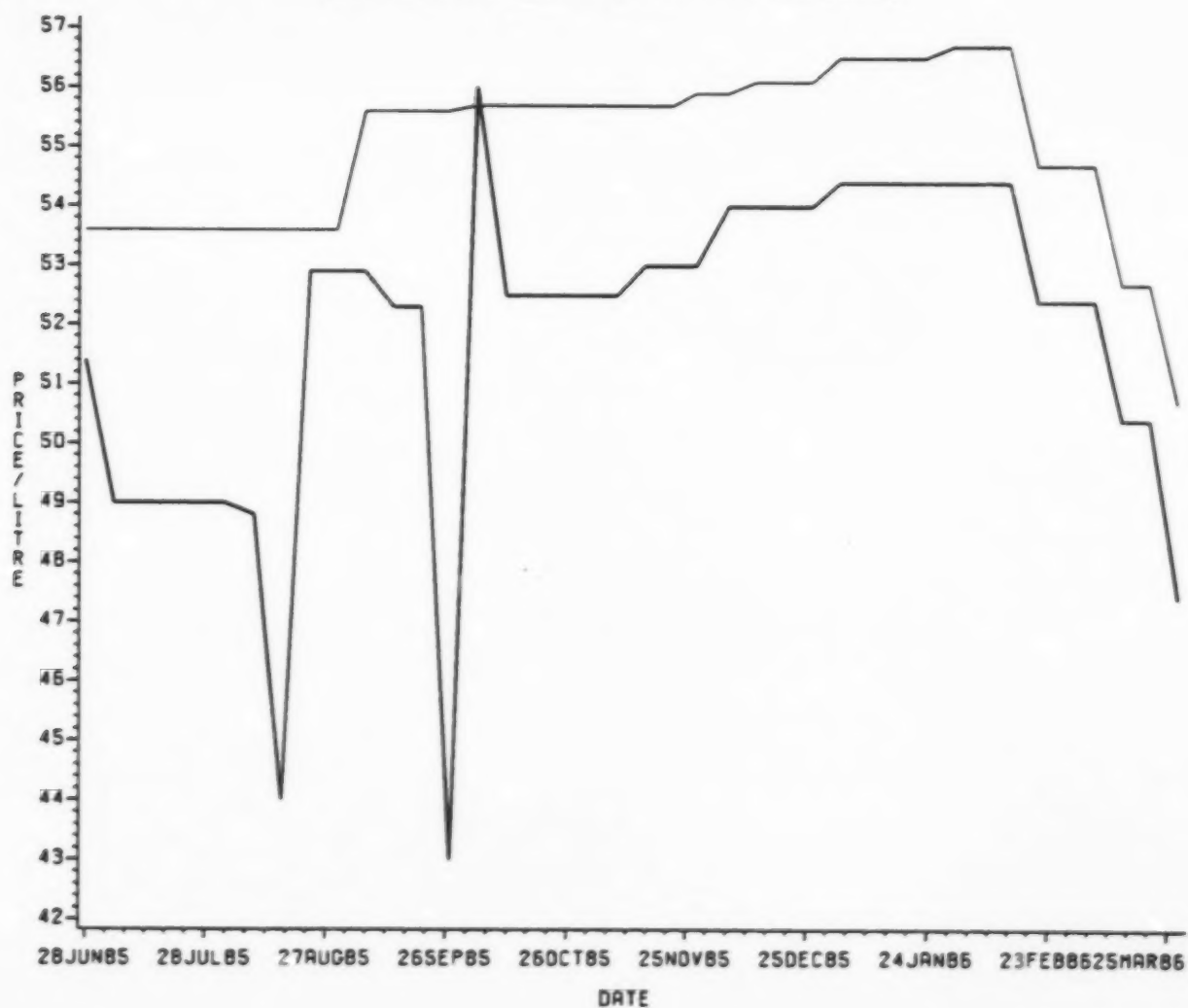


SYMBOL 1 (THIN LINE) = WEST TEXAS CRUDE OIL, CHICAGO
SYMBOL 2 (THICKER LINE) = WINNIPEG NORMAL (POSTED) GASOLINE PRICE

TABLE 8 - CRUDE OIL AND WINNIPEG NORMAL GASOLINE PRICES
(CANADIAN CENTS/LITRE)

OBS	DATE	WEST TEXAS CRUDE OIL (CHICAGO)	WINNIPEG NORMAL (POSTED) GASOLINE PRICES
1	28JUN85	23.5409	53.6
2	05JUL85	23.3459	53.6
3	12JUL85	23.2642	53.6
4	19JUL85	23.6541	53.6
5	26JUL85	23.5912	53.6
6	02AUG85	23.5975	53.6
7	09AUG85	23.7862	53.6
8	16AUG85	24.2201	53.6
9	23AUG85	24.2767	53.6
10	30AUG85	24.3962	53.6
11	06SEP85	24.2956	55.6
12	13SEP85	24.5912	55.6
13	20SEP85	25.1761	55.6
14	27SEP85	25.2642	55.6
15	04OCT85	25.3648	55.7
16	11OCT85	25.0692	55.7
17	18OCT85	25.7296	55.7
18	25OCT85	26.3962	55.7
19	01NOV85	26.4843	55.7
20	08NOV85	26.7547	55.7
21	15NOV85	27.2013	55.7
22	22NOV85	27.6730	55.7
23	29NOV85	26.3019	55.9
24	06DEC85	25.6730	55.9
25	13DEC85	24.3145	56.1
26	20DEC85	23.3522	56.1
27	27DEC85	24.0818	56.1
28	03JAN86	23.3396	56.5
29	10JAN86	22.9623	56.5
30	17JAN86	21.0063	56.5
31	24JAN86	17.5094	56.5
32	31JAN86	17.3648	56.7
33	07FEB86	15.9371	56.7
34	14FEB86	14.2327	56.7
35	21FEB86	12.1824	54.7
36	28FEB86	12.3270	54.7
37	07MAR86	11.2704	54.7
38	14MAR86	11.4906	52.7
39	21MAR86	12.6604	52.7
40	28MAR86	10.5409	50.7

FIGURE 8A
WINNIPEG GASOLINE PRICES
 (REGULAR LEADED SELF SERVE - CANADIAN CENTS/LITRE)



SYMBOL1 (THIN LINE) = NORMAL PRICE
 SYMBOL2 (THICKER LINE) = ACTUAL PRICE

TABLE 8 - WINNIPEG GASOLINE PRICES
(REGULAR LEADED SELF SERVE)
(CANADIAN CENTS/LITRE)

OBS	DATE	NORMAL GAS PRICE	ACTUAL GAS PRICE
1	28JUN85	53.6	51.4
2	05JUL85	53.6	49.0
3	12JUL85	53.6	49.0
4	19JUL85	53.6	49.0
5	26JUL85	53.6	49.0
6	02AUG85	53.6	49.0
7	09AUG85	53.6	48.8
8	16AUG85	53.6	44.0
9	23AUG85	53.6	52.9
10	30AUG85	53.6	52.9
11	06SEP85	55.6	52.9
12	13SEP85	55.6	52.3
13	20SEP85	55.6	52.3
14	27SEP85	55.6	43.0
15	04OCT85	55.7	56.0
16	11OCT85	55.7	52.5
17	18OCT85	55.7	52.5
18	25OCT85	55.7	52.5
19	01NOV85	55.7	52.5
20	08NOV85	55.7	52.5
21	15NOV85	55.7	53.0
22	22NOV85	55.7	53.0
23	29NOV85	55.9	53.0
24	06DEC85	55.9	54.0
25	13DEC85	56.1	54.0
26	20DEC85	56.1	54.0
27	27DEC85	56.1	54.0
28	03JAN86	56.5	54.4
29	10JAN86	56.5	54.4
30	17JAN86	56.5	54.4
31	24JAN86	56.5	54.4
32	31JAN86	56.7	54.4
33	07FEB86	56.7	54.4
34	14FEB86	56.7	54.4
35	21FEB86	54.7	52.4
36	28FEB86	54.7	52.4
37	07MAR86	54.7	52.4
38	14MAR86	52.7	50.4
39	21MAR86	52.7	50.4
40	28MAR86	50.7	47.4

A	B	C	D	E	F	G	H	I
TABLE 9: CALCULATION OF FALL IN CRUDE OIL PRICES								
21								
31								
41								
51								
61								
71								
81	CANADIAN PAR. CHICAGO	LOWEST PRICE JUNE-DEC 1985	AVERAGE PRICE JUNE-DEC/85	PRICE ON FEB 7 1986	PRICE ON FEB 14 1986	PRICE FALL FROM LOWEST POSSIBLE PRICE	PRICE FALL FROM JUN-DEC AVERAGE POSSIBLE PRICE	PRICE FALL FROM JUN-DEC AVERAGE
91	WTI. CHICAGO	37.53	38.45	25.77	23.86	11.76	12.68	14.39
101	MINITODA CRUDE	34.99	39.53	25.34	22.63	11.65	14.19	16.70
111			36.00	22.79	21.20		13.21	14.00
121	ALL AVERAGE	37.26	37.99	24.63	22.56	12.63 (11.79)	13.36	15.43
131							14.70 (14.02)	
141								
151								

TABLE 10: CALCULATION OF FALL IN RETAIL PRICES OF GASOLINE AS OF APRIL 7/1986

161								
171								
181								
191								
201	BASED ON CAN PAR							
211	BASED ON WTI							
221	BASED ON NAM CRUDE							
231								
241	BASED ON ALL AVERAGE							
251								
261								
271								
281								
291								
301	BASED ON CAN PAR							
311	BASED ON WTI							
321	BASED ON NAM CRUDE							
331								
341	BASED ON ALL AVERAGE							
351								

CASE 1: 60-DAY INVENTORY LAG CASE 11: 55-DAY INVENTORY LAG
AT .69 C/L AT .69 C/L

8.11	8.75	9.43	10.07
8.04	9.79	9.91	11.66
	9.11		10.21
8.71	9.22	10.14	10.65
(8.08)		(9.67)	

CASE 1A: 60-DAY INVENTORY LAG CASE 11A: 55-DAY INVENTORY LAG
AT .73 C/L AT .73 C/L

8.58	9.26	9.98	10.65
8.50	10.36	10.48	12.34
	9.64		10.80
9.22	9.75	10.73	11.26
(8.50)		(10.23)	